

## STAFFORD COUNTY SCHOOL BOARD

### Agenda Consideration

**TOPIC:** VE Workshop  
Recommendations – ES  
Prototype

**ITEM NO.:** 9B

**PREPARED BY:** Scott Horan, Executive  
Director Planning &  
Construction

**MEETING:** May 23, 2006  
May 9, 2006

**ACTION DATE:** May 23, 2006

Andre A. Nougaret,  
Assistant Superintendent  
for Support Services

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**ACTION REQUESTED BY THE SUPERINTENDENT:** That the School Board receive a summary of recommendations generated by the Elementary School (Single Story Moseley Prototype) Value Engineering (VE) Study and approve staff recommendations to incorporate selected recommendations into the Elementary School prototype design.

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#### KEY POINTS:

1. In an effort to initiate further cost efficiencies within the district's prototypical school designs (elementary, middle and high school) staff has initiated value engineering studies. VE study on the middle school prototype was completed in 2004 and the study recommendations approved by the School Board in January 2005. VE studies for the elementary and high school prototypes were commissioned in January and February 2006.
2. Value engineering for a school construction project includes specific system (mechanical, electrical, building systems, etc.) reviews, including supporting cost estimating and analysis, with the goal of getting optimal project value. In other words, it aims to reduce costs without sacrificing important elements of our educational specifications for each school prototype design. The value engineering process is conducted using basic phases to include: goal definition, information gathering, functional analysis, recommendations/proposal and follow-up or tracking of recommendations. When an independent value-engineering firm is conducting the review, the design team is included as well as key school administrative staff and other critical stakeholders.
3. On October 25, 2005, School Board approved the award of a VE study for the Elementary School prototype to URS of Richmond, Virginia. The VE workshop took place the week of February 6 - 10, 2006. The VE study team consisted of six (6) URS contracted members. The workshop included briefings from the architect of record (Moseley), tour of two (2) elementary schools with the design team, interview with the CES/ABES construction contractor and technical cross-flow from staff and the designers. On February 10, 2006 the VE team conducted an out-brief and presented their findings to staff and the architect of record.

4. After reviewing URS's VE team recommendations and consulting with the design team of record, staff recommends the attached VE team recommendations be implemented into the SCPS Elementary School prototype design.

**SCHOOL BOARD GOAL: #5** – Provide facilities that promote student learning and and community support.

**#7** – Provide school environments where teachers are safe to teach and students are safe to learn.

**FUNDING SOURCE:** N/A

**AUTHORIZATION REFERENCE:** Stafford County School Board Policy 4-32

*February 2006*

	<i>Topic</i>	<i>Est</i>	<i>Add</i>	<i>SCPS Staff</i>	<i>Est</i>
		<i>Savings</i>	<i>Cost</i>	<i>Recommendation</i>	<i>Savings</i>
A-1	Consider constructing basement for mechanical room space	180,000	0	Consider, however, this is a site specific item (most sites would not allow this consideration). Also the "prototype" design would be altered.	180,000
A-2	Separate Cafeteria from Multi-Purpose Room	0	664,000	No, would add cost with out equal educational value	0
A-3	Increase Natural Daylight in Classroom by adding one additional window	12,000	0	Yes, will consider adding were physically possible and appropriate	12,000
A-4	Change Flooring from VCT to Carpet	0	78,000	No, SCPS recently made an educational specification change from carpet to VCT due to concerns with Indoor Air Quality	0
A-5	Increase quantity of storage cabinets in classroom	0	8,000	No, SCPS feels the classroom storage requirements are addressed with mobile furniture vice built-in.	0
A-6	Revise the Front Entrance for better Visitor Flow and Simplify Receptionist's Access Control	0	0	Yes, SCPS tried to address this with CES and is improving on this design with ABES.	0
A-7	Provide improvements to the secondary entrance canopy	0	16,000	Yes, agree that improvements to this canopy should be addressed to incorporate better connection to the main school facility	-16,000
A-8	Increase EIFS finish on building in lieu of brick	58,000	0	No, SCPS is decreasing the amount of EIFS on the school below the 10' line due to damage and vandalism.	0
A-9	Replace Interior Brick in Resource Center with CMU Wall	26,000	0	Yes, SCPS agrees with this recommendation	26,000
A-10	Install planting area in one or more courtyards to enhance educational program	0	0	Yes, will consider this during.	0
A-11	Increase the number of temporary partitions to create break-out areas	0	0	Yes, will consider this when reviewing the educational program requirements for ES	0
S-1	Use Light Gauge Metal Trusses in lieu of wood trusses	215,000	0	Yes, agree.	215,000
S-2	Use structural insulated panel system (SIP) for roof deck	324,000	0	No, SIP system discussed is new and untested. Putting the insulation at the roof deck would also impact the HVAC system design and create a larger space to heat/cool in the attic.	0
S-3	Replace framing system in the cafeteria/multi-purpose room with pre-engineered steel framing	24,000	0	No, SCPS feels the framing system in-place is adequate. Using a pre-engineered framing system in this space would create steel framing members protruding into the cafeteria and gym activity space and adversely impact the use of this space.	0
M-1	Revise HVAC Exhaust	61,000	0	Yes, agree	61,000
M-2	Utilize heat recovery system on AHUs	0	0	No, AHUs are located throughout the school and implementing heat recovery on each of these unit would not be cost effective. If the AHUs were centrally located this recommendation would have more merit and be much more cost effective, however the redesign of the AHUs to a centrally located operation would be a major change to the design and in staff's opinion is not required.	0
E-1a	Replace Light Fixtures T-8s with T-5s	64,000	0	Yes, agree	64,000
E-1b	Occupancy Sensor and Centralized Lighting Controls	46,000	0	Yes, agree	46,000
E-2	Revise Electrical Load Assumptions and reduce the size of main electrical switchboard, panel boards and transformers	22,000	0	Consider, during the next prototype design	22,000
E-3a	Reevaluate Wiring and Conduit Distribution - Modular Wiring for Light Fixtures	24,000	0	No, engineer and staff feel this is not good practice	0
E-3b	Replace 3/4" conduit with 1/2"	104,000	0	Yes, agree	104,000
E-3c	Use MC Cable in lieu of conduit for wiring	68,000	0	No, engineer and staff feel this is not good practice	0
E-4	Integrate various communications wiring systems into fiber optic backbone	85,000	0	Consider, during the next prototype design	85,000

	<i>Topic</i>	<i>Est</i>	<i>Add</i>	<i>SCPS Staff</i>	<i>Est</i>
		<i>Savings</i>	<i>Cost</i>	<i>Recommendation</i>	<i>Savings</i>
E-5	Replace propane generator with diesel generator.	19,000	0	Consider, during the next prototype design	19,000
E-6	Consider using alternate energy source to eliminate emergency generator	0	0	Yes, will consider	0
E-7	Install security card access readers on three doors for after ours entry to facility	0	0	Yes, have implemented this concept in ABES and will in ES2008	0
E-8	Install audio enhancement system in all classrooms	0	0	Will consult with Instruction department. Cost to implement is unknown	0
E-9	Utilize high efficiency motors on HVAC, Transformers and other equipment	0	0	Yes, have implemented this concept in ABES and will in ES2008	0
	Total Proposed VE Team Savings	1332000			
	Total Proposed VE Team Additions		766000		818,000
	Total Staff Recommended Savings				